

Title	Cut metals using the manual plasma cutting process		
Level	3	Credits	2

Purpose	<p>This unit standard is intended for use in industry.</p> <p>People credited with this unit standard are able to prepare to cut; and cut metal using the manual plasma cutting process to industry standard.</p>
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Classification	Mechanical Engineering > Welding
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Available grade	Achieved
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Prerequisites	Unit 29651, <i>Demonstrate knowledge of health and safety when welding and thermal cutting</i> , or demonstrate equivalent knowledge and skills.
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Guidance Information

- 1 References

Health and Safety at Work Act 2015.

Health and Safety in Welding. Wellington: Department of Labour, 2006. Available from <http://www.worksafe.govt.nz>.
- 2 Definitions

Accepted industry practice – approved codes of practice and standardised procedures accepted by the wider mechanical engineering industry sectors as examples of best practice.
- 3 This unit standard is one of a metal cutting set:
 - Unit 25783, *Demonstrate knowledge of metal cutting and gouging processes* (Level 3); an introductory standard to provide foundation awareness for cutting and gouging.
 - Unit 30279, *Cut steel using the manual gas cutting process* (Level 3); a cutting standard specific to manual (not automated) gas cutting.
 - Unit 30280, *Cut metals using the manual plasma cutting process* (Level 3); a cutting standard specific to manual (not automated) plasma cutting.
 - Unit 18106, *Gouge steel using the air carbon arc gouging process* (Level 3); a gouging specific unit standard.
 - Unit 2691, *Cut metals using mechanised thermal cutting equipment* (Level 4); a cutting standard for automated cutting using gas or plasma process.

Outcomes and performance criteria

Outcome 1

Prepare to cut metal using the plasma cutting process.

Performance criteria

- 1.1 Equipment is assembled and made ready for use in accordance with manufacturer's instructions.
- 1.2 Consumables are selected in accordance with cutting requirements.
- Range nozzle components, electrode.
- 1.3 Metal is positioned and supported for cutting in accordance with accepted industry practice.
- 1.4 Cutting sequence is planned to minimise metal distortion in accordance with accepted industry practice.
- 1.5 Cutting parameters are established in accordance with cut type, metal configuration, thickness, and equipment capability.
- Range parameters – nozzle size, standoff, travel speed.

Outcome 2

Cut metal using the manual plasma cutting process to industry standard.

Performance criteria

- 2.1 Workplace safety procedures are followed.
- Range examples are – use of personal protective equipment, checking of equipment for faults, use of fume extraction equipment, elimination of risk of fire or explosion, protection from arc radiation.
- 2.2 Metal is cut to accepted industry practice.
- Range steel, stainless steel, aluminium;
evidence of at least five cuts is required, demonstrating ability to cut all three metals, sheet or plate, pipe, sections, hole piercing.
- 2.3 Cuts are compared with accepted industry practice standard by visual examination. Unsatisfactory cuts are corrected in accordance with accepted industry practice.
- Range examples of typical imperfections are – gouges, cut not square within tolerances, excessive adhering slag.

Replacement information	This unit standard and unit standard 30279 replaced unit standard 2683.
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Planned review date	31 December 2022
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	20 July 2017	N/A

Consent and Moderation Requirements (CMR) reference	0013
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact Competenz qualifications@competenz.org.nz if you wish to suggest changes to the content of this unit standard.